

## PERCHLORATE MONITORING AND RESPONSE SOP

The Massachusetts Department of Environmental Protection (MA DEP) is investigating the occurrence of perchlorate in public water supplies (PWSs) in the state and is determining the need for a drinking water standard or Maximum Contaminant Level (MCL) for this chemical. MA DEP is providing this SOP for evaluating perchlorate analytical results for the 2004 monitoring period to assist public water suppliers with respect to recommended sampling protocols and use of the Department's interim health protection guidance. MA DEP will review its interim health protection guidance for perchlorate, including new scientific assessments by the National Academy of Sciences, if available prior to the establishment of an MCL.

During this time the interim guidance for responding to detections of perchlorate at PWSs is as follows:

*If the confirmed levels of perchlorate in the finished water (representing the quality of water delivered to the consumer) exceed 1.0 ppb, notify sensitive subgroups not to drink the water.*

### COMPLIANCE

PWSs are in compliance with the interim guidance for perchlorate if the result of a single sample or the average of an initial sample and the average of the split confirmation samples collected in accordance with the procedures below does not exceed 1.0 ppb. Continued monitoring of these sources are required during 2004 in accordance with 310 CMR 22.06D.

Pursuant to the perchlorate monitoring regulations reporting of sample data to DEP is governed by 310 CMR 22.15. The maximum interval between sample collection and reporting to DEP is 10 days after the month in which the PWS receives the results or 10 days after the monitoring period (whichever is shorter). MA DEP is recommending the following protocol.

#### 1) Perchlorate $\leq$ 1.0 ppb

If the initial sample result is less than or equal to 1.0 ppb no further action is required beyond the monitoring specified under 310 CMR 22.06D. However, given the nature of the health effects of perchlorate<sup>1</sup> PWSs may choose to voluntarily sample the source more frequently than required.

#### 2) Perchlorate $>$ 1.0 ppb

If the initial sample result is greater than 1.0 ppb follow these steps:

- a. Collect a confirmation sample within 1 day of the PWS's receipt of notification of the analytical results of the initial sample. The laboratory notification must be in the form of an e-mail, fax or in writing. The PWS should send a split sample to the original lab as well as a sample to an additional lab from the list of labs approved for perchlorate by the DEP Wall Experiment Station. These labs are

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<sup>1</sup> Potential health risks of concern include effects on fetal development, which may occur as a result of a few weeks of exposure depending on how high the levels are above 1 ppb. Skin contact and inhalation exposures from showering and bathing are not a concern even at levels above 1ppb.

listed at our website at <http://www.mass.gov/dep/brp/dws/percinfo.htm>. The PWS should request a turnaround time for the confirmation sample of no more than 3 days. Those PWSs unable to comply with the 1 day confirmation sampling requirement should immediately contact their regional DEP office to schedule a compliance meeting to discuss further action.

- b. Report the initial sample result to DEP within 7 days of its receipt.
- c. Report the confirmation sample results to DEP within 3 days of their receipt.
- d. If detection is confirmed, but the average of the initial and the average of the confirmation samples is less than 1.0 ppb, the PWS continues quarterly monitoring. If both the initial and the confirmation samples of either lab exceeds 1.0 ppb, both laboratories must contact the DEP Wall Experiment Station (WES) and submit to them the sample results along with all of the associated Quality Assurance and Quality Control data required by the analytical method and their state approval to perform this work. DEP WES will review these materials within 2 days of their receipt to confirm that all the analytical procedures were performed properly.
- e. After the detection is confirmed, a meeting between the water supplier and DEP DWP needs to be scheduled to occur within 5 days of receipt of the confirmation sample. This scheduling occurs while WES completes its review of the analytical data.
- f. If the DEP WES QA/QC review supports the reported detections, compliance with the interim guidance shall be determined based on the average of the initial and the average of two split confirmation samples. If the average (confirmed level) of these samples exceeds 1.0 ppb, DEP DWP will hold the compliance meeting to discuss further actions including public notification, additional monitoring and the possibility of future treatment options. The meeting can be canceled if the results of the confirmation samples are ND.
- g. Where the confirmed level is greater than 1.0 ppb and DEP has made a determination that public notification is necessary, the PWS shall issue public notification to the consumers (covering the sensitive population) in the area served by the PWS in accordance with 310 CMR 22.16 (see attached information on public notification) as soon as practical but no more than 3 days after the determination that 1.0 ppb is exceeded.
- h. At a minimum, continue quarterly monitoring at the affected source. Although DEP is requiring quarterly monitoring to be consistent with federal monitoring requirements for all other contaminants under the Safe Drinking Water Act, the PWS may voluntarily sample the source more frequently than quarterly, given the nature of the health effects of perchlorate.<sup>2</sup> PWS on ground water sources must receive two quarters of results that are reliably and consistently below the Minimum Reporting Level (MRL) of 1.0 ppb before the public notification to consumers describing the risk to sensitive subpopulations can be lifted. PWS on surface water sources must receive four quarters of results that are reliably and consistently below the MRL before lifting public notification. The source must

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<sup>2</sup> Potential health risks of concern include effects on fetal development, which may occur as a result of a few weeks of exposure depending on how high the levels are above 1 ppb.

remain on quarterly monitoring. If at any time during this monitoring the result exceeds 1.0 ppb, public notification resumes.

3. Perchlorate > 18 ppb

If the initial and confirmatory samples are greater than 18 ppb, then no one should consume the water. Water, juice, formula, and foods for sensitive subpopulations should not be prepared with tap water from this source. Bottled water or other drinking water from another source should be used for drinking, cooking, and food preparation until further notice.

For additional information about the Department's perchlorate work, please visit the following website: <http://www.mass.gov/dep/brp/dws/percinfo.htm>